

GEOGRAPHIC INFORMATION SYSTEM TECHNICIAN I/II

DEFINITION

To perform technical duties in database mapping and Geographic Information Systems (GIS) creation and maintenance or database design, development, testing and maintenance; to interpret and enter related data into a computerized system and validate accuracy of information and related operating systems.

DISTINGUISHING CHARACTERISTICS

Geographic Information System Technician I - This is the entry-level class in the Geographic Information System Technician series. Positions in this class typically have little or no directly related work experience and work under immediate supervision while learning job tasks. The Geographic Information System Technician I class is distinguished from the II level by the performance of less than the full range of duties assigned to the II level. Incumbents work under immediate supervision while learning job tasks, progressing to general supervision as procedures and processes of assigned area of responsibility are learned.

Geographic Information System Technician II – This is the journey level class in the Geographic Information System Technician series and is distinguished from the I level by the ability to perform the full range of duties assigned with only occasional instruction or assistance as unusual or unique situations arise. Positions in this class are flexibly staffed and are normally filled by advancement from the I level.

SUPERVISION RECEIVED

Geographic Information System Technician I - Receives immediate supervision from assigned supervisory or management staff.

Geographic Information System Technician II - Receives general supervision from assigned supervisory or management staff.

SUPERVISION EXERCISED

Geographic Information System Technician I – None.

Geographic Information System Technician II – May exercise technical and functional supervision over lower level staff.

### ESSENTIAL DUTIES

Duties may include, but are not limited to, the following:

Creates new maps for use as source material for City-wide GIS automation program; codes map manuscripts with attribute data.

Assists in the development and maintenance of database systems associated with GIS mapping and subsequent map layers; maintains map data for mobile data users.

Develops, tests, maintains and troubleshoots new and existing data processing applications and database systems; creates and maintains reports for system applications.

Reviews a variety of data and prepare reports for use by City departments and external recipients.

Ensures accuracy of manual and automated mapping and related data.

Updates a variety of maps, including utility, zoning, reference, topographic, political boundary and Assessor parcel maps; makes changes and draws new boundaries to ensure maps are current.

Prepares maps, line drawings, color graphics, charts, graphs, architectural renderings and other documents or materials for use in brochures, reports and presentations to the City Council, boards and commissions, and other public agencies.

Codes and digitizes maps and geographic feature data into the GIS database following established procedures and sequences to update layers within the system.

Participates, as assigned, in City committees and groups to provide input to GIS planning and implementation strategies and work plans; and provides technical assistance to others as needed.

Builds and maintains positive working relationships with co-workers, other City employees and the public using principles of good customer service.

Performs related work as necessary.

### JOB RELATED AND ESSENTIAL QUALIFICATIONS

#### Geographic Information System Technician I

Knowledge of:

Principles and practices of Geographic Information System (GIS) concepts, surveying and mapping, or relational and spatial databases, and computer operating systems.

JOB RELATED AND ESSENTIAL QUALIFICATIONS (continued):

Geographic Information System Technician I (continued):

Knowledge of (continued):

Principles and techniques of programming, database systems, data processing applications and related analysis and design.

Algebra, geometry and trigonometry, especially as related to the computation of distances, angles and areas.

Computer aided drafting and mapping tools and programs, including Computer Assisted Design (CAD), Geographic Information System (GIS) automated mapping applications, and other relevant software, programs and databases and uses.

Map drafting procedures, terminology, drafting tools and equipment, both manual and automated.

Principles and practices of customer services.

Ability to:

Perform technical duties in database mapping and geographic information systems (GIS) creation and maintenance.

Learn to design, develop, test, maintain and troubleshoot new and existing database systems and data processing applications; create and maintain reports for system applications.

On a continuous basis, know and understand all aspects of the job. Intermittently analyze work papers, reports and special projects; identify and interpret technical and numerical information; observe and problem solve operational situations, technical policies and procedures; understand, interpret and explain policies and procedures to staff and other agencies and the public.

Make simple engineering computations and produce engineering drawings.

Learn to research sources of geographic data; collect, interpret and integrate mapping data from a variety of sources to prepare maps and reports.

JOB RELATED AND ESSENTIAL QUALIFICATIONS (continued):

Ability to (continued):

Learn to identify characteristics of aerial photographs and interpret maps; prepare maps, accurately delineating feature locations and boundaries on map manuscripts.

Learn to operate a PC in an on-line processing environment and use relevant software application programs and databases.

Communicate clearly and concisely, both orally and in writing.

Establish and maintain effective working relationships with those contacted in the course of work.

### Geographic Information Technician II

In addition to requirements for the Geographic Information Technician I:

#### Knowledge of:

Advanced use of automated mapping applications and systems such as AutoCAD, ESRI-based GIS applications, use of relational databases such as Microsoft Access or Oracle, and use of computer operating systems and local area networks.

Pertinent local, State and Federal rules and regulations related to mapping, including zoning, special districts and election precinct mapping.

#### Ability to:

Independently apply GIS technology in creating and maintaining geographic source data.

Independently identify and research sources of geographic spatial and tabular data; collect, interpret, convert and integrate such data to prepare and update maps.

Analyze data and develop logical solutions to complex data processing application programming problems.

Independently perform technical duties in the design, development, testing, maintenance and troubleshooting of a variety of data processing applications and database systems.

### EXPERIENCE AND EDUCATION

Any combination equivalent to education and experience that could likely provide the required knowledge and abilities would be qualifying. A typical way to obtain the knowledge and abilities would be:

#### Geographic Information System Technician I:

Experience: No experience is required; one (1) year of technical experience in using GIS technology or database systems is highly desired.

Education: Equivalent to an Associate's degree from an accredited college or university in geographic information technology, computer science, data management, engineering, land surveying or related field.

Geographic Information System Technician II:

Experience: Two (2) years of responsible experience performing duties similar to that of a Geographic Information System Technician I in the City of Hayward.

Education: Equivalent to an Associate's degree from an accredited college or university in geographic information technology, computer science, data management, engineering, land surveying or related field.

SPECIAL REQUIREMENTS:

Essential duties require the mental and/or physical ability to: work in a standard office environment and use standard office equipment and current software; grasp, perform repetitive hand movements and fine coordination to prepare documents and data using a computer keyboard and mouse/trackball; on a continuous basis, sit at drafting table or computer station; intermittently stand at counter for long periods of time; visually differentiate between colors on land use maps; sit for prolonged periods of time; stand, walk, reach, twist, turn, kneel, bend, squat and stoop in the performance of daily office activities; converse by telephone, email, in person, and to small or large groups and be clearly understood; read and comprehend technical and complex documents; interact with the public and all different levels of City staff in an effective and professional manner; and safely lift, carry and maneuver office supplies and computer related equipment, documents, or boxes of, weighing up to 35 pounds. Essential functions must be performed with or without reasonable accommodations.

PROBATIONARY PERIOD: One (1) Year

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APP GROUP: 4

FPPC STATUS: Non-Designated

FLSA STATUS: Non-Exempt